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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/002,300	12/05/2001	Nobuyoshi Yagi	Q67366	4399

7590 06/02/2004

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EXAMINER

AHMED, SHEEBA

ART UNIT

PAPER NUMBER

1773

DATE MAILED: 06/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/002,300

Applicant(s)

YAGI ET AL.

Examiner

Sheeba Ahmed

Art Unit

1773

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 March 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) 8 and 21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 9-20 and 22-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3/3/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Applicants response under 37 CFR 1.111 is acknowledged and has been entered in the above-identified application. **Claims 1-25 are pending of which 8 and 21 have been withdrawn from consideration.**

Priority

2. Receipt is acknowledged of a certified translation of foreign priority document, Japanese Patent Application No. 2000-370808, submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1, 3-7, 9, 10, 12-15, and 22-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites that the resin sheet comprises "a gas barrier layer, a base layer, and two hard coat layers respectively as the outermost layers". It is unclear from the claim and the Specification whether the term "respectively" refers to just the two hard coat layers or to all the recited layers. Claim 10 contains a similar ambiguity.

Appropriate amendment or clarification is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-4, 6, 7, 9-11, 13-20, and 22-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugawa et al. (US 6,500,518 B2) in view of Oka et al. (US 5,747,152).

Sugawa et al. discloses an epoxy optical sheet that is excellent in optical properties and heat resistance (Column 1, lines 7-10) and comprises an epoxy resin layer **(corresponding to the base layer of the claimed invention)** and another resin layer formed on one side thereof (Column 2, lines 33-42). The resin layer functions as the surface layer in the epoxy optical sheet and is preferably formed of a urethane resin. Since the resin layer functions as the surface layer, it may be selected so as to impart various functions to the sheet (such as chemical resistance, surface hardness, optical anisotropy and low moisture permeability). For example, the resin layer may be a two-layer structure having a polyvinyl alcohol layer for gas barrier properties **(corresponding to the gas barrier layer of the claimed invention)** formed on a urethane layer **(corresponding to the surface hardcoat layer of the claimed invention)** for imparting stripability and surface hardness (Column 3, lines 63-67 and Column 4, lines 1-14). The epoxy optical sheet is usable as a liquid crystal cell substrate (Column 6, lines 43-45) and as an antireflection sheet (Column 7, lines 1-9).

Sugawa et al. do not teach that their urethane outer layer contains transparent particles and has a recesses and protrusions on the outer surface.

However, Oka et al. disclose an antireflection sheet having the effect of preventing reflection at various displays such as those that may be used in liquid crystal displays (Column 2, lines 49-56) and comprise ultra fine particles localized in a high density as a functional ultrafine particle layer in a hard coat layer (Column 1, lines 59-67). Examples of the ultrafine particles include those having a size of not more than 200nm and having an antireflection property. Examples of particles used to impart an antireflection property include Sb_2O_3 , ZnO , ITO , SnO_2 , and TiO_2 (Column 11, lines 55-67). The particles are not entirely embedded in the surface resin layer to allow the sheet to function as an antireflection film **(hence leading to recesses and protrusion in the surface layer)** (Column 12, lines 56-67).

Accordingly, it would have been obvious to one having ordinary skill in the art to add particles to the surface urethane layer taught by Sugawa et al. given that Oka et al. specifically teach that particles localized in a high density in a surface hardcoat layer prevent reflection in various displays such as in liquid crystal displays. With regards to the limitation that the laminate comprises two hardcoat layers, the Examiner takes the position that it would have been obvious to increase the number of hardcoat layers in the resin laminate to further increase the surface hardness the laminate. Furthermore, the Examiner takes the position that the surface roughness and peak-to-valley height of the recesses and protrusions limitation is inherently met by the surface layer as taught

by Oka et al. given that the type of particles and the size of particles as taught by Oka et al. and that in the instant invention are identical.

5. Claims 5 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugawa et al. (US 6,500,518 B2) in view of Oka et al. (US 5,747,152) and Nevitt et al. (US 6,268,961 B1).

Sugawa et al. and Oka et al., as discussed above, do not teach that the difference in refractive index between the resin of the hard coat and the particles contained in that resin is between 0.03 to 0.10.

However, Nevitt et al. teach that the difference in indices of refraction of a particle and a resin in a particle-containing layer can influence factors such as normal angle gain and the amount of color averaging.

Accordingly, it would have been obvious to one having ordinary skill in the art to optimize the difference in refractive index between the resin of the hard coat and the particles contained in that resin given that Nevitt et al. specifically teach that the difference in indices of refraction of a particle and a resin in a particle-containing layer can influence factors such as normal angle gain and the amount of color averaging.

Response to Arguments


6. Applicant's arguments with respect to claim 1-25 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sheeba Ahmed whose telephone number is (571)272-1504. The examiner can normally be reached on Monday-Friday from 9am to 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Thibodeau can be reached on (571)272-1516. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Sheeba Ahmed
Art Unit 1773
May 28, 2004